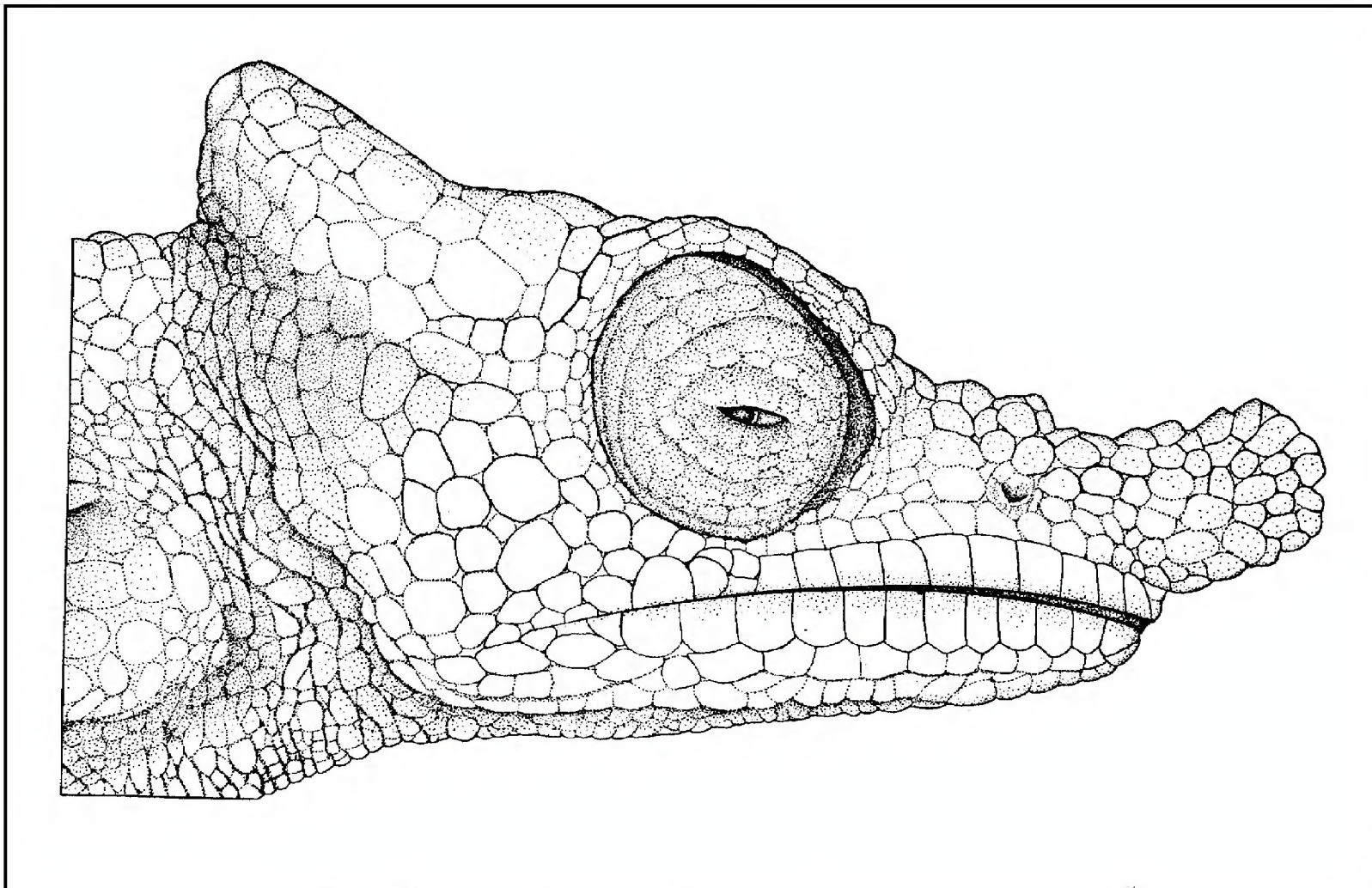

BULLETIN

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Chicago Herpetological Society



Volume 44, Number 1
January 2009



BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY

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Notes on a Dicephalic Eastern Ribbon Snake, *Thamnophis sauritus sauritus*

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Abstract

The first confirmed record of dicephaly in the eastern ribbon snake, *Thamnophis s. sauritus*, is reported. A juvenile female, wild-caught in North Carolina, was maintained in captivity for 1,050 days. Some behavioral observations are described.

On 12 September 2005 a dicephalic, neonatal female eastern ribbon snake, *Thamnophis sauritus sauritus* (Figures 1 and 2), was wild-caught along the edge of a waterfowl impoundment on the west side of Lake Mattamuskeet near Rose Bay community, Hyde County, North Carolina, USA, by Ben Cameron. It was subsequently presented to the staff of Weymouth Woods Sandhills Nature Preserve near Southern Pines, North Carolina, from whom I received it on 16 September 2005. I maintained the specimen alive in captivity (plastic storage box with brown paper towel substrate and water dish) from that date until its death on 28 July 2008—a period of 1,050 days.

The snake was handled minimally throughout its captivity, as I was more concerned with keeping it healthy than subjecting it to any undue stress. No attempts were made to obtain precise measurements while the animal was alive, but it was estimated to be approximately 200 mm in total length when first found—well within the size range of typical North Carolina neonates (Palmer and Braswell, 1995). The umbilical scar was visible when the specimen was first received. Weight was recorded only once while alive: 2.0 g on 27 January 2006.

Each brain clearly functioned independently in crawling, feeding, drinking, tongue-flicking, and defensive biting. The heads frequently worked against each other during locomotion; most movements were awkward and erratic, much as reported by Yoshinaga (1901) and Wallach (2004, 2007). The right head, however, was dominant, bolder, and much more successful at feeding.

Food was normally offered at two- to four-day intervals. A total of 277 food items were successfully eaten between 16 September 2005 and 25 July 2008 (Table 1). These included 201 eastern mosquitofish (*Gambusia holbrooki*), 52 guppies (*Poecilia [Lebistes] reticulata*); 12 juvenile pirate perch (*Aphredoderus sayanus*), six juvenile coastal shiners (*Notropis petersoni*), five cut portions of caudal fin from green frog (*Rana [Lithobates] clamitans*) tadpoles; and one juvenile redbreast sunfish (*Lepomis auritus*). Most items were presented to the snake directly, on forceps.

Nineteen of the 277 food items were halved to avoid conflict when both heads tried to feed at once. The halves were fed to both heads simultaneously, resulting in a total of 296 successful swallowings. Of these, 267 (90%) were by the right head and only 29 (10%) by the left head. This may have been due at least in part to the fact that I most often presented food to the right head to help ensure successful feeding once that head proved to be the more enthusiastic feeder. Frequently the left head made no attempt to feed; swallowing by the right head was greatly facilitated on those occasions (Figure 3). The two heads often competed for food and sometimes bit one another, but on many occasions, once swallowing by the right head had progressed to a certain point, the left head would become acquiescent or even



Figure 1. Dicephalic juvenile *Thamnophis s. sauritus* from Hyde County, North Carolina. (Photo by L. Todd Pusser)



Figure 2. Detail of axial bifurcation in *Thamnophis s. sauritus*. (Photo by L. Todd Pusser)

Table 1. Food items successfully eaten by captive dicephalic *Thamnophis s. sauritus* between 16 September 2005 and 25 July 2008.

Food item	<i>n</i> *	Entire	Cut portion	Thawed	Fresh dead	Alive	Right head ate	Left head ate	Both heads ate	Both heads refused
<i>Gambusia holbrooki</i> (eastern mosquitofish)	201	192	9	193	4	4	197	16	14	1
<i>Poecilia [Lebistes] reticulata</i> (guppy)	52	51	1	45	4	3	50	2	2	1
<i>Aphredoderus sayanus</i> (pirate perch)	12	12	—	10	2	—	11	3	3	1
<i>Notropis petersoni</i> (coastal shiner)	6	6	—	6	—	—	6	5	5	—
<i>Rana [Lithobates] clamitans</i> (green frog) tadpole	5	—	5	5	—	—	2	3	—	1
<i>Lepomis auritus</i> (redbreast sunfish)	1	1	—	1	—	—	1	—	—	—
Total	277	262	15	260	10	7	267	29	24	4

* *n* = number of food items successfully eaten (does not include those items refused by both heads). For some food items the number of times the right head ate plus the number of times the left head ate sums to a number greater than *n* because on 19 occasions a single food item was divided and the halves were eaten by both heads simultaneously.

cooperative, sometimes performing swallowing motions itself even though the actual swallowing was being done by the other head. Similar behavior, potentially reflecting feedback between two independent brains, has also been reported in at least one



Figure 3. Dicephalic *Thamnophis s. sauritus* feeding on *Gambusia holbrooki*. The right head was the dominant feeder, consuming 90% of all food items successfully swallowed. (Photo by Jeffrey G. Hall)

captive *Pantherophis obsoletus* (Wallach, 2007). On 24 occasions, both heads fed simultaneously—either separate food items were offered or a food item was halved in order to minimize conflict, with each head eventually swallowing a portion. The left head unsuccessfully attempted to feed on at least 62 occasions when the right head successfully fed. On only five occasions was the left head the only head to successfully feed (on one of these occasions the right head attempted to feed but was unsuccessful; in the other instances it made no attempt to eat). Feeding attempts failed by both heads on eight occasions (either swallowing was attempted but the food item was eventually abandoned by both heads, or the food item was disgorged after swallowing). Offered food was completely refused by both heads on only four occasions, one of which was during the last few hours of the snake's life.

The snake presumably shed its natal skin before it was first captured. It molted an additional 15 times—on 16 October 2005; 23 February, 20 March, 5 May, 12 June, 24 July, 19 September, and 12 November 2006; 19 January, 18 May, 9 July, 20 August, 30 September, and 19 December 2007; and 2 April 2008. Usually little or no difficulty with ecdysis was noted, but



Figure 4. Dicephalic *Thamnophis s. sauritus*; preserved specimen (NCSM 74402). (Photo by Jeffrey C. Beane)

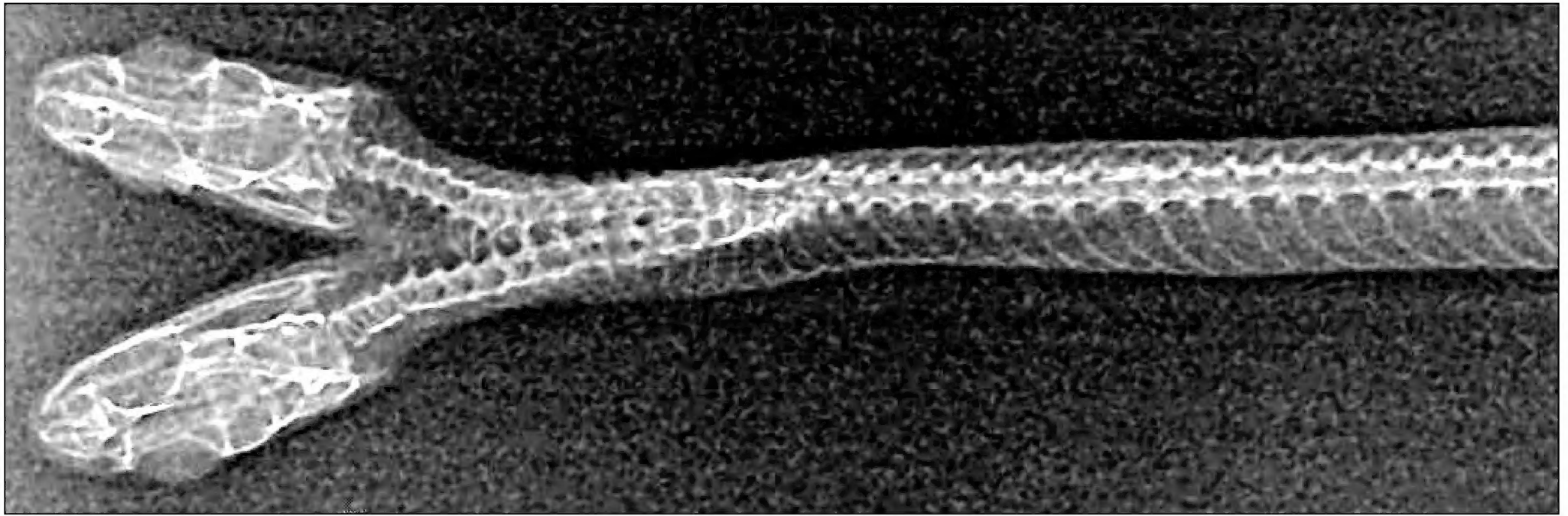


Figure 5. Radiograph of NCSM 74402, showing skeletal detail of bifurcation. (Photo by L. Shane Christian)

on at least one or two occasions I assisted in removing some bits of epidermis that did not readily come free from one or both heads. Despite the ready and frequent feedings and regular molts, the snake did not grow as rapidly as expected. Upon its death it measured 237 mm in snout–vent length and 354 mm in total length—well under the size one might reasonably expect for a female *T. sauritus* approaching the end of her third year. The extent, if any, to which dicephaly may have affected growth is unknown.

The precise cause of death was not determined. On 18 July 2008, each head ate a portion of a *Notropis petersoni* and appeared to experience considerably more difficulty than usual in swallowing. It is possible that some injury or malady was acquired during that feeding or a previous one. Though food items were consumed on two subsequent occasions (22 and 25 July), they were accepted only with greater coaxing than usual, and unusual difficulty in swallowing was noted on both occasions. Food was refused during the three days preceding death. Many of the difficulties experienced by two-headed snakes and reasons for their frequent premature demise were summarized by Wallach (2004, 2007). Only 22 other dicephalic specimens are known to have survived for more than a year in captivity (Wallach, 2007).

To my knowledge, this specimen represents the first definitive record of dicephaly in *Thamnophis sauritus*. Jackson (1847, 1870) reported among the collections of the Warren

Anatomical Museum “a small ‘striped snake’ with two heads” from New Hampshire. That specimen was probably either *T. sauritus* or *T. sirtalis* (the only two species in that state likely to be perceived as “striped”), but as it is now apparently lost (Van Wallach, pers. comm.), its identity must remain speculative.

The individual reported here was the basis for the inclusion of *T. sauritus* in a complete listing of snakes species known to exhibit axial bifurcation by Wallach (2007). It was also featured in a popular article for *Wildlife in North Carolina* magazine and was depicted on the cover of that publication’s October 2007 issue (Pusser, 2007).

The specimen (Figure 4) was preserved and deposited in the herpetological research collections of the North Carolina State Museum of Natural Sciences (NCSM 74402). Radiographs taken approximately three months after preservation revealed about 16 vertebrae in each separate neck portion with a fusion zone of about six vertebrae (Figure 5).

Acknowledgments

Ben Cameron, Scott Hartley, Todd Pusser, and Josh Rose facilitated my acquisition of the specimen and made these observations possible. Todd Pusser and Jeff Hall provided photographs. Shane Christian (North Carolina State University, College of Veterinary Medicine) provided radiographs. Van Wallach provided helpful insight and literature references.

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Laws Pertaining to Reptiles and Amphibians in Illinois

compiled and commented on by John Archer

“At last,” you’re thinking, “someone is clarifying the Illinois laws than pertain to herps!”

Well, no. I’m not particularly bright and I don’t have a law degree. The former means that it’s irrational for me to advise and the latter means that it’s illegal. If you are a lawyer and would like to write a more comprehensive article, we’d love to publish it. What I’m trying to do is list the laws that might pertain to herps and provide you with links so that you can make up your own mind. It’s not easy, because Illinois law is not particularly clear in this area. I’ve tried to find all the state laws that may affect your hobby. I can’t guarantee that I have them all, but I will say that I have done a lot of research and this should be a fairly comprehensive list as of January 2009. I haven’t attempted to cover local jurisdictions. Some counties or cities also have ordinances that may apply to herps, and some have searchable databases covering these laws. Try googling “your government’s name” and ordinances, acts, laws, or statutes. I discovered that the county I live in actually has a narrower definition of dangerous animals than the state does. That’s not uncommon, and the more restrictive local law takes precedence. There is a municipality in southern Illinois that prohibits keeping all reptiles! If the records are not online, you’ll have to rely on your local clerk to help.

For “click-on” links to the exact statutes and codes, please go to www.chicagoherp.org. The statutes and acts are quoted verbatim when in **bold** type. My comments are in normal type.

I thank John P. Levell for his book (*A Field Guide to Reptiles and the Law*, second edition. Lanesboro, Minnesota: Serpent’s Tale), which gave me a starting place for this article. And special thanks to Mike Redmer of the U.S. Fish and Wildlife Service and Scott Ballard of the Illinois Department of Natural Resources for their time and expertise in reviewing and suggesting valuable additions and changes. Any mistakes are my own. Please alert me to mistakes you may notice so I can correct them.

Any individual interested in herps should be familiar with the **United States “Endangered Species Act of 1973,”** which not only affects the animals you may keep in captivity, but also how you should deal with listed animals in the wild. The act and various summary web pages may be accessed here: <http://www.fws.gov/endangered/whatwedo.html#General>. And the current list of federally protected species is here: <http://www.fws.gov/Endangered/wildlife.html#Species>.

Besides knowing what animals are listed, you should probably be familiar with this definition: **The term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.** Which can be found at: <http://www.fws.gov/Endangered/ESA/sec3.html>

Note that the definition of “take” is very encompassing. Are you harassing the animal when posing it for a photograph?

Another federal law that touches on herps is:

TITLE 21—FOOD AND DRUGS

CHAPTER I—FOOD AND DRUG ADMINISTRATION DEPARTMENT OF HEALTH AND HUMAN SERVICES SUBCHAPTER L—REGULATIONS UNDER CERTAIN OTHER ACTS ADMINISTERED BY THE FOOD AND DRUG ADMINISTRATION

Accessed here: <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/cfrsearch.cfm?fr=1240.62>.

This is the 4" turtle rule. Note that it’s administered by the FDA. Here’s a bit of what is most cited:

PART 1240—CONTROL OF COMMUNICABLE DISEASES

Subpart D—Specific Administrative Decisions Regarding Interstate Shipments

Sec. 1240.62 Turtles intrastate and interstate requirements.

(a) **Definition.** As used in this section the term “turtles” includes all animals commonly known as turtles, tortoises, terrapins, and all other animals of the order Testudinata, class Reptilia, except marine species (families Dermachelidae and Chelonidae).

(b) **Sales; general prohibition.** Except as otherwise provided in this section, viable turtle eggs and live turtles with a carapace length of less than 4 inches shall not be sold, held for sale, or offered for any other type of commercial or public distribution. . . .

With some exceptions:

(d) **Exceptions.** The provisions of this section are not applicable to:

- (1) The sale, holding for sale, and distribution of live turtles and viable turtle eggs for bona fide scientific, educational, or exhibitional purposes, other than use as pets.
- (2) The sale, holding for sale, and distribution of live turtles and viable turtle eggs not in connection with a business.
- (3) The sale, holding for sale, and distribution of live turtles and viable turtle eggs intended for export only, provided that the outside of the shipping package is conspicuously labeled “For Export Only.”

Also, field herpers should be aware that federal laws or administrative rules, and prescribed penalties are often in place that extend protection to native fauna, including herps, on federally-owned lands (e.g., National Forests, National Wildlife Refuges, Corps of Engineers lands). There are sometimes exceptions. For example, species that are considered “game” (e.g., snapping turtles in Illinois) and that have seasons allowing licensed take under state law may sometimes be taken on federal land. Similar provisions are usually in effect on state and other public lands. The best way to clarify is to check with the site superintendant’s office, or look for posted signs that list rules in effect for a given site. When in doubt, don’t collect.

Illinois also has an Endangered Species Protection Act, (**520 ILCS 10/**) **Illinois Endangered Species Protection Act**. You can link to this act by googling “520 ILCS 10/.” Three definitions from **Section 2** are probably most pertinent:

“Endangered Species” means any species of plant or animal classified as endangered under the Federal Endangered Species Act of 1973, P.L. 93-205, and amendments thereto, plus such other species which the Board may list as in danger of extinction in the wild in Illinois due to one or more causes including but not limited to, the destruction, diminution or disturbance of habitat, overexploitation, predation, pollution, disease, or other natural or manmade factors affecting its prospects of survival.

“Threatened Species” means any species of plant or animal classified as threatened under the Federal Endangered Species Act of 1973, P.L. 93-205, and amendments thereto, plus such other species which the Board may list as likely to become endangered in the wild in Illinois within the foreseeable future.

“Take” means, in reference to animals and animal products, to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. “Take” means, in reference to plants and plant products, to collect, pick, cut, dig up, kill, destroy, bury, crush, or harm in any manner.

Note that all federally listed species are also listed in Illinois and Illinois has a few added definitions for “take.”

Illinois does have a permit process for protected species.. A permit may be issued for “possession only” or for “possession and/or sale.” Make sure you apply for the permit you want and comply with the permit you receive.

(520 ILCS 10/4) (from Ch. 8, par. 334)

Sec. 4. Upon receipt of proper application and approval of the same, the Department may issue to any qualified person a permit which allows the taking, possession, transport, purchase, or disposal of specimens or products of an endangered or threatened species of animal or federal endangered plant after the effective date of this Act for justified purposes, that will enhance the survival of the affected species by zoological, botanical or educational or for scientific purposes only. Rules for the issuance and maintenance of permits shall be promulgated by the Department after consultation with and written approval of the Board.

You may write to this address for an application:

*Endangered Species Program Manager
Division of Natural Heritage
Illinois Department of Natural Resources
524 S. Second Street
Springfield, IL 62701-1787*

The Illinois Endangered Species Protection Board web site may be accessed here: <http://www.dnr.state.il.us/espb/index.htm>. This site has more information on obtaining permits.

The major Illinois statute that pertains to capturing amphibians and reptiles is:

**AUGUST 3, 1998 17 ILL. ADM. CODE CH. I, SEC. 880
TITLE 17: CONSERVATION
CHAPTER I: DEPARTMENT OF NATURAL RESOURCES
SUBCHAPTER b: FISH AND WILDLIFE
PART 880
THE TAKING OF REPTILES AND AMPHIBIANS**

The act is pretty clearly written. Some of what it states is that you need a valid sport fishing license to capture any frog or turtle, details legitimate methods of capture, limits daily catch to eight of each species for reptiles and amphibians and sixteen of each species for possession limits, (though captive born animals can be possessed in greater quantities for up to 90 days), stipulates that you will restore the habitat to as near the original condition as possible, has a season for taking bullfrogs and prohibits collecting in the LaRue-Pine Hills/Otter Pond Research Natural Area.

The complete act:

AUTHORITY: Implementing and authorized by Sections 5/10-30, 10-35, 10-60, 10-115, 20-5 and 20-90 of the Fish and Aquatic Life Code [515 ILCS 5/10-30, 10-35, 10-60, 10-115, 20-5 and 20-90] and the Aquaculture Development Act [20 ILCS 215/1 et seq.] and P.A. 86-1453, effective December 12, 1991.

SOURCE: Adopted at 16 Ill. Reg. 109, effective December 20, 1991; recodified by changing the agency name from Department of Conservation to Department of Natural Resources at 20 Ill. Reg. 9389; amended at 22 Ill. Reg. 14852, effective August 3, 1998.

Section 880.10 Prohibition of Commercial Use

It is unlawful to take, possess, buy, sell, offer to buy or sell or barter any reptile, amphibian, or their eggs or parts taken from the wild in Illinois for commercial purposes unless otherwise authorized by statute.

Section 880.20 Methods of Taking and Capture

- a) Only those persons who hold a valid sport fishing license or a valid Sportsmen’s Combination License may take or attempt to take turtles and/or frogs [515 ILCS 5/20-5].
- b) Turtles may be taken only by hand, hook and line, or landing net. For the purposes of this Part a landing net is defined as a hand-held net with no greater than 1.5 inch bar measurement netting, an opening of not greater than 5 feet in diameter, and a handle.
- c) Bullfrogs may be taken only between June 15 and August 31, both dates inclusive. Bullfrogs may be taken only by hook and line, gig, pitchfork, spear, bow and arrow, hand, or landing net.
- d) No person shall take bullfrogs by commercial fishing devices, including dip nets, hoop nets, traps or seines, or by the use of firearms, airguns or gas guns.
- e) No person shall take or possess any species of reptile or amphibian listed as endangered or threatened in Illinois (17 Ill. Adm. Code 1010), except as provided by 17 Ill. Adm. Code 1070.
- f) All other species of reptiles and amphibians may be

captured by any device or method which is not designed or intended to bring about the death or serious injury of the animals captured. This shall not restrict the use of legally taken reptiles or amphibians as bait by anglers.

g) Any captured reptiles or amphibians which are not to be retained in the possession of the captor shall be immediately released at the site of capture.

(Source: Amended at 22 Ill. Reg. 14852, effective August 3, 1998)

Section 880.30 Daily Catch and Possession Limits

The daily catch limit for reptiles is eight (8) of each species and for amphibians is eight (8) of each species. The possession limit for reptiles is sixteen (16) of each species and for amphibians is sixteen (16) of each species.

Section 880.40 Captive Born Reptiles and Amphibians

Captive born offspring of a legally held reptile or amphibian, not intended for commercial purposes, is exempt from the possession limits of Section 880.30 for a period of ninety (90) days.

Section 880.50 Protection of Habitat

Habitat features which are disturbed in the course of a search for reptiles and amphibians shall be returned to as near their original position and condition as possible, e.g. overturned stones and logs shall be restored to their original locations.

Section 880.60 Areas Closed to the Taking of Reptiles and Amphibians

Unless otherwise allowed by statute or administrative rule, the taking of reptiles and amphibians is prohibited in the following areas: the LaRue-Pine Hills/Otter Pond Research Natural Area in Union County. The closed area shall include the Research Natural Area as designated by the U.S. Forest Service and the right-of-way of Forest Road 345 from the intersection of Forest Road 345 with Forest Road 236 to the intersection of Forest Road 345 with the Missouri Pacific railroad tracks.

(Source: Added at 22 Ill. Reg. 14852, effective August 3, 1998)

Section 880.70 Additional Protective Regulations

Except as otherwise allowed by statute or administrative rule, taking or possession of the following species of reptiles and amphibians is prohibited: copperbelly watersnake (*Nerodia erythrogaster neglecta*) in Edwards, Gallatin, Hamilton, Hardin, Johnson, Lawrence, Massac, Pope, Pulaski, Richland, Saline, Wabash, Wayne and White counties.

(Source: Added at 22 Ill. Reg. 14852, effective August 3, 1998)

This statute may be accessed here: <http://dnr.state.il.us/legal/adopted/880.pdf>.

Just in case you feel the government is always restricting your actions, the law states that if you are legally collecting, it's against the law for someone to interfere with you under:

HUNTER INTERFERENCE PROHIBITION ACT

(720 ILCS 125/2) (from Ch. 61, par. 302)

Sec. 2. Any person who performs any of the following is

guilty of a Class B misdemeanor:

(a) Wilfully obstructs or interferes with the lawful taking of wild animals by another person with the specific intent to prevent that lawful taking.

You can link to the complete act by googling "720 ILCS 125/2."

Anyone who keeps herps in captivity needs to be familiar with the **Illinois Dangerous Animals Act (720 ILCS 585)**. This is perhaps the most confusing piece of legislation pertaining herps in Illinois. You can link to the complete act by googling "720 ILCS 585."

This act defines dangerous animals and essentially prohibits individuals from keeping them. The definition includes "any poisonous or life-threatening reptile." Note that amphibians aren't mentioned and seem to get a free pass, so you needn't worry about your amphiumas or giant salamanders.

(720 ILCS 585/0.1) (from Ch. 8, par. 240)

Sec. 0.1. As used in this Act, unless the context otherwise requires:

"Dangerous animal" means a lion, tiger, leopard, ocelot, jaguar, cheetah, margay, mountain lion, lynx, bobcat, jaguarundi, wolf or coyote, or any poisonous or life-threatening reptile.

(720 ILCS 585/1) (from Ch. 8, par. 241)

Sec. 1. No person shall have a right of property in, keep, harbor, care for, act as custodian of or maintain in his possession any dangerous animal except at a properly maintained zoological park, federally licensed exhibit, circus, scientific or educational institution, research laboratory, veterinary hospital, hound running area, or animal refuge in an escape-proof enclosure.

(Source: P.A. 95-196, eff. 1-1-08.)

Note that while the feds have regulations for obtaining an exhibitor's license, it does NOT apply to reptiles or amphibians. A federal exhibitor's license does not exempt a herp exhibitor from the Illinois statute. The pertinent definition under the federal statute is:

Code of Federal Regulations

Title 9: Animals and Animal Products

Part 1—Definition of Terms

§ 1.1 Definitions.

Animal means any live or dead dog, cat, nonhuman primate, guinea pig, hamster, rabbit, or any other warmblooded animal, which is being used, or is intended for use for research, teaching, testing, experimentation, or exhibition purposes, or as a pet. This term excludes birds, rats of the genus *Rattus*, and mice of the genus *Mus*, bred for use in research; horses not used for research purposes; and other farm animals, such as, but not limited to, livestock or poultry used or intended for use as food or fiber, or livestock or poultry used or intended for use for improving animal nutrition, breeding, management, or production efficiency, or for improving the quality of food or fiber. With respect to a dog, the term means all dogs, including those used for hunting, security, or breeding purposes.

And the licensing paragraph is:

Title 9: Animals and Animal Products

Part 2—Regulations

Subpart A—Licensing

§ 2.1 Requirements and application.

(a)(1) Any person operating or intending to operate as a dealer, exhibitor, or operator of an auction sale, except persons who are exempted from the licensing requirements under paragraph (a)(3) of this section, must have a valid license. A person must be 18 years of age or older to obtain a license. A person seeking a license shall apply on a form which will be furnished by the AC Regional Director in the State in which that person operates or intends to operate. The applicant shall provide the information requested on the application form, including a valid mailing address through which the licensee or applicant can be reached at all times, and a valid premises address where animals, animal facilities, equipment, and records may be inspected for compliance. The applicant shall file the completed application form with the AC Regional Director.

You can find this law online at: <http://ecfr.gpoaccess.gov>. Follow the menus to Title 9 and the appropriate paragraphs.

So what about big snakes? The Illinois Supreme Court made a ruling on this in 1995 in “**State v. Fabing**.” The best summary of this case that I can find was written by Harold P. Hannah, JD, former professor of Agriculture and Veterinary Law at University of Illinois, and published in the *Southern Illinois University Law Journal* in the summer of 2000. The title of the article was *Survey of Illinois Law: Liability for Animal-Inflicted Injury*. The following excerpt from that work sums up the Supreme Court’s decision:

XII. STATUTORY PROHIBITION ON KEEPING NAMED WILD ANIMALS

At common law there was never a “one-bite” theory as a defense to liability for injury by a wild animal. One who kept such animals was presumed to know that if given an opportunity, the animals would injure persons or other animals. Obviously, some wild animals are more dangerous and threatening than others. Recognizing this, the Illinois legislature in 1969 (amended in 1986) enacted the “Illinois Dangerous Animals Act.” Dangerous animals are defined as “lion, tiger, leopard, ocelot, jaguar, cheetah, margay, mountain lion, lynx, bobcat, jaguarundi, bear, hyena, wolf or coyote, or any poisonous or life-threatening reptile.” The Act applies to owners and those who have custody or control over these wild animals.

Persons cannot have a property right in such animals, and they are prohibited from keeping, maintaining or having possession of such. But there are some exceptions as the rule does not apply to “a properly maintained zoological park, federally licensed exhibits, circus, scientific or educational institutions, research laboratory, veterinary hospital or animal refuge in an escape-proof enclosure.” The fact that a person has “attempted to domesticate the dangerous animal” is no defense.

The Illinois Supreme Court has had some difficulty in interpreting this section of the Act due to the addition of “life-threatening” in the definition of reptiles one is prohibited from owning. In *People v. Fabing*, the defendants maintained that the wording of the statute was unconstitutionally vague. The Illinois Supreme Court did not agree. It recognized that this addition to the Act was necessary because there are non-poisonous reptiles capable of injuring or killing persons.

The court had no difficulty in determining that two fifteen-foot

Burmese pythons owned by the defendant could injure or kill a person. But a question was raised about a seven-foot boa constrictor. This concerned the court because boa constrictors as a species can be life-threatening, but an individual snake seven-feet-long is not so regarded. The State argued that the Department of Agriculture, in enforcing provisions of the Animal Control Act, had promulgated regulations stating that a six-foot boa constrictor was life-threatening. The court held that this regulation of the Department of Agriculture did not apply to the Dangerous Animal Act.

As stated earlier, under the Animal Control Act, the determination of a dog as vicious or dangerous cannot be breed specific; but in this case the Illinois Supreme Court held that “life-threatening” reptiles can be species specific. Yet, it agreed that if a member of the species is too small to be life-threatening, then there should be no prohibition against its ownership. This departure from “species specific” apparently applies only to size and ability but not to temperament, as the court said it was not an acceptable defense to show that the reptile capable of injuring a person had a docile temperament.

The court also recognized that alligators are life-threatening but it didn’t say anything about the size of the alligator. Perhaps, there is a difference between biting and constricting. The court agreed, however, that with respect to alligators, the Dangerous Animals Act is not unconstitutionally vague. But apparently the court did not believe that the law was unconstitutionally vague in a determination of when a constricting snake would become life-threatening—when the reptile reached some length between seven and fifteen feet. Although wildlife people are not afraid of baby alligators, the court did not hold that maturity of an animal had anything to do with their being defined as “life threatening.”

The complete article can be found here: <http://www.animallaw.info/articles/arus24silulj693.htm>.

I’ll try to have the decision available online soon. As you can see, the Supreme Court’s decision didn’t entirely clarify the situation.

Title 8 of the Agriculture and Animals Administrative Code is pretty clear that no licensee in Illinois may *sell* a snake six feet or longer under **Section 25.110 Animals Prohibited from Sale**:

b) Licensees shall not offer for sale those animals the ownership of which would constitute a violation of Section 1 of the Illinois Dangerous Animals Act [720 ILCS 585/1]. These include the following animals and any hybrids thereof: lion, tiger, leopard, ocelot, jaguar, cheetah, margay, mountain lion, lynx, bobcat, jaguarundi, civet, serval, hyena, bear, wolf or coyote, or any poisonous or life-threatening reptile. A life-threatening reptile is any member of the crocodilian family or any constricting snake six feet or over in length, such as boa, python, and anaconda. This does not include any canine or feline breeds registered by the American Kennel Club, the United Kennel Club, the Cat Fancier’s Association or the International Cat Association.

The complete code may be accessed here:

TITLE 8: AGRICULTURE AND ANIMALS

<http://www.ilga.gov/commission/jcar/admincode/008/008parts.html>

And the particular section here:

Title 8, Chapter I, subchapter b: part 25 Animal Welfare Act Section 25.110 Animals Prohibited from Sale

<http://www.ilga.gov/commission/jcar/admincode/008/008000250001100R.html>

If you’re going into business, you may want to look at these

rules:

PROFESSIONS AND OCCUPATIONS

(225 ILCS 605/2) Animal Welfare Act

(from Ch. 8, par. 302)

Sec. 2. Definitions. As used in this Act unless the context otherwise requires

“Pet shop operator” means any person who sells, offers to sell, exchange, or offers for adoption with or without charge or donation dogs, cats, birds, fish, reptiles, or other animals customarily obtained as pets in this State. However, a person who sells only such animals that he has produced and raised shall not be considered a pet shop operator under this Act, and a veterinary hospital or clinic operated by a veterinarian or veterinarians licensed under the Veterinary Medicine and Surgery Practice Act of 2004 shall not be considered a pet shop operator under this Act.

225 ILCS 605/3) (from Ch. 8, par. 303)

Sec. 3. (a) Except as provided in subsection (b) of this Section, no person shall engage in business as a pet shop operator, dog dealer, kennel operator, cattery operator, or operate a guard dog service, an animal control facility or animal shelter or any combination thereof, in this State without a license therefor issued by the Department.

225 ILCS 605/18.1)

Sec. 18.1. Sale or gift of reptiles and other animals.

(a) A pet shop shall not sell a reptile, offer a reptile for sale, or offer a reptile as a gift or promotional consideration unless a notice regarding safe reptile-handling practices that meets the requirements in subsection (b) is (i) prominently displayed at each location in the pet shop where reptiles are displayed, housed, or held and (ii) distributed to the purchaser or recipient.

(b) The notice regarding safe reptile-handling practices shall be one of the following:

(1) a notice provided at no charge by the Illinois Department of Public Health; or

(2) a notice that has the dimensions of at least 8.5 inches by 11 inches, that uses fonts that are clearly visible and readily draw attention to the notice, and that contains all of the following statements:

(A) “As with many other animals, reptiles carry salmonella bacteria, which can make people sick. Safe reptile-handling steps should be taken to reduce the chance of infection.”

(B) “Always wash your hands thoroughly after you handle your pet reptile, its food, and anything it has touched.”

(C) “Keep your pet reptile and its equipment out of the kitchen or any area where food is prepared. Kitchen sinks should not be used to bathe reptiles or wash their dishes, cages, or aquariums. If a bathtub is used for these purposes, it should be cleaned thoroughly and disinfected with bleach.”

(D) “Don’t nuzzle or kiss your pet reptile.”

(E) “Keep reptiles out of homes where there are children under 5 years of age or people with weakened immune systems. Children under 5 years of age or

people with weakened immune systems should avoid contact with reptiles.”

(F) “Pet reptiles should not be allowed in child care centers.”

(G) “Pet reptiles should not be allowed to roam freely throughout the home or living area.”

(Source: P.A. 91-741, eff. 1-1-01.)

You can link to the full act by googling “225 ILCS 605/18.1.”

The application may be accessed here: <http://www.agr.state.il.us/Forms/AnimalHW/AW-1.pdf>.

If you’re thinking of buying or selling herps or breeding herps to sell, especially animals indigenous to Illinois, the Illinois statute that governs you is **(515 ILCS 5/) Fish and Aquatic Life Code**. There are also federal statutes that may apply. I’ll write another article about commerce in the future.

Here’s a statute that may have had bearing on a recent case of two bearded dragons. Among other things, this statute defines companion animal.

(510 ILCS 70/) Humane Care for Animals Act.

Sec. 2.01.

“Animal” means every living creature, domestic or wild, but does not include man.

(Source: P.A. 78-905.)

Sec. 2.01a. Companion animal. “Companion animal” means an animal that is commonly considered to be, or is considered by the owner to be, a pet. “Companion animal” includes, but is not limited to, canines, felines, and equines. (Source: P.A. 92-454, eff. 1-1-02.)

You can link to the full act by googling “510 ILCS 70/.”

The Department of Agriculture also has some rules for treatment of animals which seem to apply only to licensees under this act, but again, I’m no lawyer.

TITLE 8: AGRICULTURE AND ANIMALS

CHAPTER I: DEPARTMENT OF AGRICULTURE

SUBCHAPTER b: ANIMALS AND ANIMAL PRODUCTS (EXCEPT MEAT AND POULTRY INSPECTION ACT REGULATIONS)

PART 35 HUMANE CARE FOR ANIMALS ACT

Section 35.5 Definitions

“Animal” as used in this Part means any mammal, bird, fish, or reptile offered for sale, trade, or adoption or for which a service is provided by any person licensed under this Act.

Those rules may be accessed here: <http://www.ilga.gov/commission/jcar/admincode/008/00800035sections.html>.

I found a few more rules that may affect you and your herps. If your divorce is getting ugly, you should have your lawyer look at this:

FAMILIES

(750 ILCS 60/) Illinois Domestic Violence Act of 1986.

ARTICLE II ORDERS OF PROTECTION

(11.5) Protection of animals. Grant the petitioner the exclusive care, custody, or control of any animal owned,

possessed, leased, kept, or held by either the petitioner or the respondent or a minor child residing in the residence or household of either the petitioner or the respondent and order the respondent to stay away from the animal and forbid the respondent from taking, transferring, encumbering, concealing, harming, or otherwise disposing of the animal.

You can link to the full act by googling “750 ILCS 60/.”

The next act probably means more to fur farmers than herp farmers, but if someone tries to interfere with your legal raising of animals, this act may help your case:

(510 ILCS 60/) Domesticated Wild Animals Act.

(510 ILCS 60/1) (from Ch. 8, par. 24)

Sec. 1. All birds and animals ferae naturae or naturally wild, including fur bearing animals not native to this State, when raised or in domestication, or kept in enclosures and reduced to possession, are hereby declared to be objects of ownership and absolute title, the same as cattle and other property, and shall receive the same protection of law, and in the same way and to the same extent shall be the subject of trespass or theft, as other personal property.

(Source: Laws 1961, p. 2059.)

(510 ILCS 60/2) (from Ch. 8, par. 24a)

Sec. 2. When fox, rabbit, mink, chinchilla, marten, fisher, muskrat, karakul and other fur bearing animals are raised in captivity for breeding or other useful purposes (a) such animals shall be deemed domestic animals; (b) such animals and the products thereof shall be deemed agricultural products; and (c) the breeding, raising, producing or marketing of such animals or their products by the producer thereof shall be deemed an agricultural pursuit.

(Source: Laws 1949, p. 27.)

(510 ILCS 60/3) (from Ch. 8, par. 24b)

Sec. 3. The provisions of this Act shall not be held or

construed to repeal or modify the provisions of the “Wildlife Code of Illinois” applicable to the breeding, raising, producing or marketing of any such birds or animals so raised in captivity. Nor shall the provisions of this Act be construed to restrict or limit the powers with reference to zoning granted by statute to cities, villages or incorporated towns either as to territory within or territory contiguous to but outside of the limits of such cities, villages or incorporated towns or to restrict or limit the powers with reference to zoning granted by statute to counties.

(Source: P.A. 81-358.)

You can link to the full act by googling “510 ILCS 60/.”

And lastly, if you’re working on your tan or working in a tanning parlor, don’t take your bearded dragon with you.

TITLE 77: PUBLIC HEALTH

CHAPTER I: DEPARTMENT OF PUBLIC HEALTH

PART 795 TANNING FACILITIES CODE

SECTION 795.210 SANITATION

- j) Dogs, cats, birds, reptiles and other pets shall not be permitted in tanning facilities. This exclusion does not apply to guide dogs or fish in aquariums.**

Accessed here:

<http://www.ilga.gov/commission/jcar/admincode/077/077007950002100R.html>.

That’s what I can find in the Illinois laws. I did a lot of searching, but I repeat that I may have missed other pertinent statutes. Let me know if I should include others on the web site. For more on laws concerning animals of all kinds throughout the U.S., check out the Michigan State University College of Law’s Animal Legal and Historical Web Center at: <http://www.animallaw.info/>.

Good luck and stay legal.

What You Missed at the December CHS Meeting

John Archer
j-archer@sbcglobal.net
(all photos by Dick Buchholz)

We had a large turnout for our December meeting, not totally unexpected since we offered free food. It's amazing how attractive the word *free* is to any herper, and when it's combined with food it's almost irresistible. Of course, it might be that the prospect of chatting with me was the lure. OK, probably not, but certainly the ability to mingle and converse with other society members *was* a draw. Not as much as the food, but still an incentive. Herpers love to talk, show off their animals, and eat. Plenty of each occurred at the December meeting, which was held on Tuesday so as not to conflict with New Year's Eve. If you missed it because we moved it up a night, I'm sorry, but

it was publicized in the forum and in the *Bulletin*. If you missed it because you couldn't attend for some other reason, you're sorry. The food was really good, but the baked goods were extraordinary. Junior brought a cake in the shape of an albino Burmese python baked by his mother, who is a professional cake maker, and Deb Krohn brought an alligator made of cupcakes, which looked as though it was made by a professional baker. The food went fast and next year we will have a rule saying that the choicest items will be saved for the president when he finishes his duties. Sheesh, ya turn back and the food disappears!



Donna Gustafsson, acting CEO of the Peggy Notebaert Nature Museum, delivered an impromptu speech saying how much the museum values its relationship with the CHS.



Junior's (sorry I don't know your last name) mom baked this albino Burmese python.



Deb Krohn baked an alligator that didn't taste like chicken.



Dan Nathan's iguanas enthralled several potential new members.



The party winding down.

The Tympanum

To the Editor

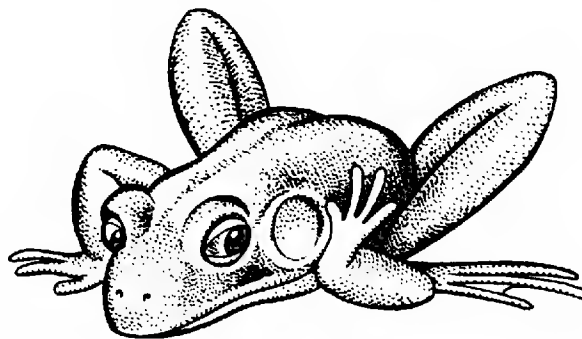
Bulletin of the Chicago Herpetological Society

Re: 43(11):177-178, 2008

I am pleased that Dave and Tracy Barker, two pillars of the reptile trade, enjoyed my book, *The Lizard King: The True Crimes and Passions of the World's Greatest Reptile Smugglers*. The Barkers ended their review with a sentence I found troubling, however: "This is a very entertaining read, but it is not particularly friendly to herpetoculture." The role of a journalist, of course, is not to be friendly to anyone—it is to be accurate—and I agree that the history of herpetoculture is a sordid one. Since I wrote the book out of a love for reptiles and their care, the Barkers' final line itched at me. I re-read their positive review, and, though it's bad manners, I disagree.

The Barkers wrap praise for *The Lizard King* around two complaints: They object to efforts by the U.S. Fish and Wildlife Service to police the reptile trade, and they object to my characterization of the trade as a "lint screen for human vices."

The industry is certainly filled with completely legitimate figures. I will offer without data that it is dominated by law abiders. That does not mean that a handful of people with criminal records have not shaped the industry we know today. From zoos knowingly paying men such as Hank Molt to smuggle reptiles for them, to the nefarious circumstances of the albino Burmese pythons that launched "the golden age of herpetoculture," to smuggling by dominant import-export companies like Strictly Reptiles, crime is central to the rise of the reptile industry. What makes the reptile trade different from alcohol, railroads, and other industries pioneered in part by crime is that



most of the reptile trade's pioneers are still at work, legal and (in some cases) illegal.

In writing the *lint screen* line I tried to think of a single vice I couldn't connect to a prominent figure somewhere in the reptile industry: narcotics trafficking,

firearms trafficking, robbery, bribery, smuggling, even murder. At a top industry trade show I met neo-Nazis, a pedophile, and sex club owners. I was present when one man offered to kill the competitor of another for \$20,000. I am challenged to come up with another industry in which vice is so easily found. The Barkers may not like the facts of the trade, but pretending will not make it clean. Quite the contrary:

I am shocked the Barkers do not offer readers any tools to distinguish the good in the trade from the bad. For years they have worked with Burmese, reticulated, and blood pythons, species which come from areas rife with reptile smuggling. Their experience with the trade's dark side, or avoiding it, would have been useful. Same with ball pythons. Money in ball pythons quickly led to a cartel in West Africa that has involved violence and thievery as most any major ball python importer can relate. Likewise, they offer us no insight into smuggling by America's zoos. (In hiding from that history they are not alone. James B. Murphy shamefully ducks his head from the topic in his *Herpetological History of the Zoo and Aquarium World*.)

Instead, remarkably, the Barkers use much of their review to condemn U.S. Fish and Wildlife Service efforts to stop reptile smuggling, even smuggling of our most critically endangered species. As a reptile lover, I found this approach not particularly friendly to herpetoculture. **Bryan Christy,**
bryan@bryanchristy.com

YOU NEED TO BE THERE!

It's too much fun to miss!

You'll get a free t-shirt, free lunch, and free pizza Saturday night.

And it's so much fun to exhibit that you should be paying us!

ReptileFest 2009

April 4–5

Herpetology 2009

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

BLANDING'S TURTLE TRAITS

S. Ruane et al. [2008, Copeia 2008(4):771-779] note that con-specific turtle populations typically exhibit variation in demographic and reproductive traits such as adult size, growth rate, sex ratio, and clutch size. Variation in these traits has been previously correlated to variation in local environmental conditions, latitude, and habitats. Given that some turtle species have large geographic ranges and occur in a variety of habitats, it is imperative to determine how traits differ throughout the species' range. Towards this end, the authors examined demographic and reproductive traits of Blanding's turtles (*Emydoidea blandingii*) in Grant County, Nebraska, over the span of six years. The population's sex ratio was female biased (0.7:1.0, M:F) and skewed towards large, adult turtles (5:1, adult:juvenile). The analysis of adult survivorship suggests that female turtles (59% annual survivorship) may be experiencing greater mortality rates compared to males (90% annual survivorship), possibly due to road mortality. Unlike all previous reports, analyses of reproductive parameters indicate that turtles in the western Nebraska population do not increase clutch size with body size. Rather, egg size increases as body size increases, which may help reduce desiccation rates of the eggs in an arid environment. Optimal egg size may not be reached due to pelvic width constraints of females. Comparisons of these findings with those of other Blanding's turtle studies are discussed.

TURTLES IN A CAMBODIAN BIORESERVE

S. G. Platt et al. [2008, Chelonian Conservation and Biology 7(2):195-204] investigated the biodiversity, exploitation, and conservation status of turtles in the Tonle Sap Biosphere Reserve (TSBR) of Cambodia from June 2000 through October 2001. The study confirmed the occurrence or former occurrence of four native species of turtles (*Batagur baska*, *Cuora amboinensis*, *Heosemys annandalii*, and *Malayemys subtrijuga*) in TSBR and discusses the possible occurrence of four others, including two native species (*Amyda cartilaginea* and *Pelochelys cantorii*) and two exotics (*Trachemys scripta* and *Pelodiscus sinensis*). Large numbers of turtles were being unsustainably harvested from TSBR at the time of the study. Most harvested turtles were destined for urban markets in Cambodia and international wildlife markets in Vietnam and southern China, with very few kept by fishermen for household consumption. The authors regard any attempts to eliminate the subsistence harvest of turtles as impractical in Cambodia but recommend a complete ban on the extraction of turtles and other wildlife resources from the three core areas of TSBR. Incidental to the investigation of turtles in TSBR, data were collected on sexual size dimorphism and reproductive biology of *M. subtrijuga*. Findings indicate that female *M. subtrijuga* are larger than males, and females may construct underwater nests as floodwaters begin to recede in the early dry season.

BYCATCH REDUCTION DEVICE

Z. W. Fratto et al. [2008, Chelonian Conservation and Biology 7(2):205-212] note that aquatic biologists throughout the United States use fyke nets to sample fish. Often, these nets have high turtle bycatch and mortality rates, especially when set in extreme environmental conditions. Because a previous study found increased turtle mortality using Wisconsin-type fyke nets, the authors designed and tested a bycatch reduction device (BRD) for this net type and investigated its ability to reduce turtle bycatch without affecting fish capture. Over 68 net-nights, the BRD significantly reduced turtle bycatch with no significant decrease in fish quantity or richness when compared to a control fyke net with no BRD. The authors argue that aquatic biologists and managers should consider turtle mortality when sampling fishes and other aquatic organisms, and also suggest that further studies be conducted to develop BRDs for all passive freshwater sampling nets. Further, BRDs that have already been designed and tested and appear effective at reducing turtle bycatch without significantly affecting fish catch, should be implemented in freshwater fisheries methodologies. This is the first known BRD developed for freshwater trap nets.

CONSERVATION OF SULAWESI TURTLES

I. E. Ives et al. [2008, Chelonian Conservation and Biology 7(2):240-248] investigated the distribution and conservation status of *Indotestudo forstenii*, *Leucocephalon yuwonoi*, and *Cuora amboinensis* in northern Sulawesi, Indonesia, during 2005–06. Village interviews suggest that *I. forstenii* and *L. yuwonoi* are more widely distributed than available records indicate. The authors verified the occurrence of *I. forstenii* at five heretofore unreported localities in Central and North Sulawesi, including xeric hills above the Palu Valley and sites adjacent to Lore Lindu National Park, and local villagers reported encounters in Panua Nature Reserve. Sexual size dimorphism was not evident in the sample ($n = 103$) of *I. forstenii*. Wild populations of *L. yuwonoi* could not be located, but interview data suggest that this endemic species might occur in Bogani Nani Wartabone National Park and Panua Nature Reserve. Among the *L. yuwonoi* measured ($n = 150$), males were larger than females; large body size may give males an advantage in intraspecific dominance contests. *Cuora amboinensis* remains common in northern Sulawesi where it occurs in a variety of wetland habitats. Subsistence harvesting of turtles appears minimal in northern Sulawesi owing to a cultural bias against consuming turtle meat. Little evidence was found of commercial exploitation of turtles in North Sulawesi and Gorontalo; however, a modest but increasing number of turtles are being harvested in Central Sulawesi to supply local ethnic Chinese, and international pet, food, and medicinal markets. Future conservation efforts should seek to verify the occurrence of endemic chelonians in protected areas and develop management plans to insure the survival of these populations.

HABITAT SELECTION BY BULLSNAKES

J. M. Kapfer et al. [2008, *Copeia* 2008(4):815-826] note that bullsnakes (*Pituophis catenifer sayi*) have been the subject of few rigorous scientific investigations despite suspected declines. Because relatively little ecological information exists for this species, sound conservation or management decisions regarding them are difficult to make. This is particularly true in the upper Midwest, which represents the northern periphery of the snake's geographic range. Using radio-telemetry, aspects of the ecology of bullsnakes (15 males, 12 females) in Sauk County, Wisconsin, were studied. This included determining habitat preferences and movement patterns. Male and female bullsnakes exhibited a preference for open bluff sides over habitats traditionally reported as favored by this species (i.e., sand prairies or grasslands), and avoided areas of agriculture and closed canopy bluff side forest. Nested ANOVA analysis of home ranges measured as 100% minimum convex polygons (23 ha females, 41 ha males) and 95% kernels (53 ha females, 83 ha males) were larger in males than females. Average daily movement rates were larger in males (31.7 m females, 36.7 m males). Evidence of site fidelity was also found. Based on these results, the conservation of this snake can be substantially influenced by preservation and maintenance of large sites containing open bluffs and oak savannas.

EARLIER BREEDING JAPANESE AMPHIBIANS

T. Kusano and M. Inoue [2008, *J. Herpetology* 42(4):608-614] note that recently, declines in amphibian populations all over the world have been reported. Global warming has the potential to become one of the most important causes for those declines, because reproductive activities of amphibians are affected severely by temperature and rainfall. It has been reported that climate warming has promoted a long-term tendency toward earlier breeding among amphibian populations in Europe and North America. However, some studies have not supported such a long-term change in the timing of amphibian breeding in those areas. The authors analyzed long-term data sets (12- to 31-year period) on the date of first spawning for four populations of three Japanese amphibians (*Hynobius tokyoensis*, *Rana ornativentris*, and *Rhacophorus arboreus*) in the suburbs of Tokyo and detected a significant trend toward earlier breeding in all populations examined. They also detected that the date of first spawning was correlated strongly with the mean monthly temperature just before the breeding season for each population examined. Given that the long-term trend of warming in the study district was significant, this investigation demonstrated that climate warming has affected the timing of breeding in at least some species or populations of amphibians in East Asia.

EUPHRATES SOFTSHELLS IN IRAN

H. Ghaffari et al. [2008, *Chelonian Conservation and Biology* 7(2):223-229] note that the Euphrates softshell turtle, *Rafetus euphraticus*, is one of the least known species of the Trionychidae. It is found only in the Euphrates and Tigris rivers and their tributaries in Iran, Turkey, Syria, and Iraq. Its range in Iran is

limited to Khuzestan Province. In the course of this study (February 2002–June 2005), 16 visits were made to habitats of the species along the Karkheh, Dez, and Karoon rivers and their tributaries in Khuzestan. During these visits 25 specimens were observed and habitat characteristics and threat factors were recorded. Habitat destruction, pollution, and fisheries interactions (intentional killing) are the main threats to the survival of this species in Iran.

POPULATION GENETICS OF *AMBYSTOMA*

C. Ramsden [2008, *Copeia* 2008(3):586-594] notes that some unisexual invertebrates engage in low levels of sex with related sexual species, and this raises the possibility that unisexual vertebrates have a similar capability. This study compared the population genetic signatures of a triploid population of unisexual salamanders in the genus *Ambystoma* and sympatric sexual *A. jeffersonianum* to investigate the degree to which clonal reproduction is occurring in this natural unisexual population. Analysis of nine microsatellite loci revealed extremely high allelic and genetic diversity in both the *A. jeffersonianum* and triploid populations, indicating that strict clonal reproduction is unlikely to be occurring among these unisexuals. In contrast, significant linkage disequilibrium for all pairs of loci, high heterozygote excess, and large variation in F_{IS} values across all microsatellite loci (range of F_{IS} = -0.710 to -0.157) in the triploid population indicate that gynogenesis is the most common but not exclusive form of reproduction occurring in unisexual *Ambystoma*. This study provides the best evidence thus far that unisexual *Ambystoma* are utilizing a complex mode of reproduction that has features of both sexual and asexual reproduction.

MOVEMENTS OF SPOTTED FROGS

N. D. Chelgren et al. [2008, *Copeia* 2008(4):742-751] used five years of recapture data and Bayesian estimation to assess seasonal survival, movement, and growth of Oregon spotted frogs (*Rana pretiosa*) relocated into created ponds at Dilman Meadow in Oregon, USA. The authors evaluate hypotheses specific to the relocation and elucidate aspects of *R. pretiosa* life history that are poorly known. The odds of survival of relocated individuals during the first year following relocation were 0.36 times the survival odds of relocated and non-relocated frogs after one year since the relocation. Survival rate was higher for large frogs. After accounting for frog size, little variation was found in survival between ponds at Dilman Meadow. Survival was lowest for males during the breeding/post-breeding redistribution period, suggesting a high cost of breeding for males. The highest survival rates occurred during winter for both genders, and one small spring was used heavily during winter but was used rarely during the rest of the year. Individual growth was higher in ponds that were not used for breeding, and increased with increasing pond age. This study supports other evidence that *R. pretiosa* use different habitats seasonally and are specific in their overwintering habitat requirements. Because frogs were concentrated during winter, predator-free overwintering springs are likely to be of particular value for *R. pretiosa* populations.

Unofficial Minutes of the CHS Board Meeting, December 19, 2008

The meeting was called to order at 7:39 P.M. at the Schaumburg Public Library. Board members Dan Bavirsha, Deb Krohn, Matt O'Connor and Amy Sullivan were absent.

Officers' Reports

Recording Secretary: Cindy Rampacek read the minutes of the November 14 board meeting and minor corrections were made. The minutes were accepted.

Treasurer: Andy Malawy presented the November financial reports and no questions were raised.

Membership Secretary: Mike Dloogatch reported that November membership was at 548 and we are showing approximately 12 new members for December so far. Names of three non-renewed members were shared with the board..

Vice-president: Jason Hood reported that he was still looking for a January speaker. He has several options for February, however he is still working on it. Weather and travel seem to be factors.

Sergeant-at-arms: The attendance at the November elections meeting was 53.

Committee Reports

Shows:

- Great Lakes Pet Expo, Saturday, January 31.
- Reptile Rampage, March 8.
- Chicagoland Family Pet Expo, Arlington Racetrack, March 20-22.
- Notebaert Nature Museum, first weekend of each month.

Old Business

Symposium 2009: Aaron LaForge is working on the website. He is looking for suggestions and you can view the site through the forum. Cindy Rampacek will be sending out invites in early January. We are working on getting the Pay-pal account registered and set up.

Portable sign: Cindy Rampacek is looking to arrange prizes for members to win with designs for such a sign.

Rules for live animal exhibitors: Voting on the rules was deferred until January.

Note cards: Note cards have been ordered and will be shipped directly to Corresponding Secretary Deb Krohn.

Security: Linda Malawy did some research with other herp societies on their protocol and learned that they have one additional person looking over the bank account. Rick Hoppenrath and his wife created a spreadsheet for the current inventory of sale items. Rick will maintain the database of inventory. Possibly looking at investing in an inventory control receipt book. This will create better accountability for merchandise sold at events.

New Business

ReptileFest chair: John Archer announced he is chairing his final ReptileFest this year. John is looking for a volunteer to

replace him in 2010.

Arbor Ridge Vet clinic: Dr. Shawn Hook is looking for people willing to have their reptiles ultra-sounded. Dr. Hook is looking to document the intestinal tract for a paper he is writing. Ultrasounds will be free. Dr. Hook's equipment is extremely portable and Cindy Rampacek is working with him to be present at ReptileFest. The clinic is located in the Madison, Wisconsin, area. He hopes to document around 30 animals of each species if possible. For more information please contact Cindy Rampacek.

The Lake County 4-H was wondering if the CHS would be interested in writing a letter to the 4-H in regard to the need to update the reptile care information and to offer assistance in doing so for the "Scurrying Ahead Level 2." This is a handout to all 4-H members. Jenny Vollman will draft a kind letter making some suggestions.

The Lake County "fox snake house" is going to be sold. The owner of the home is asking a high price. Rob Carmichael at the Wildlife Discovery Center is looking to raise money to purchase the home. There will be info to sponsor fox snakes on the WDC website to raise the money. This will include notifications on the movements of the snakes for the period of sponsorship.

Online Bulletin: We will look into the possibility of getting online the past issues. We have about 2 years worth already in the form of PDFs. Issues from further back will require some effort to set up as PDF files.

Banner Advertisements: Nick D'Andrea has a friend interested in doing banner ads for us on Kingsnake.com.

Round Table

Aaron's computer is fixed. ReptileFest page will be available after the first of the year.

Pam Bavirsha advertised ReptileFest with all of the gingerbread parties she has supplied; she has four parties left in the season.

The meeting adjourned at 8:49 P.M.

Respectfully submitted by Recording Secretary Cindy Rampacek



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Chicago Herpetological Society
Income Statement: January 1 – December 31, 2008

Income		Expense	
Adoptions	\$ 1,487.00	Adoptions	\$ 653.88
Grants	15.00	Grants	4,855.00
ReptileFest	49,354.65	ReptileFest	28,713.12
Other CHS Shows	2,025.00	Other CHS Shows	667.93
CHS Group Trips	800.00	CHS Group Trips	1,150.00
Merchandise Sales	1,879.50	Merchandise Sales	822.67
Conservation — Cryptobranchids	0.00	Conservation — Cryptobranchids	405.00
Conservation — <i>Cyclura</i>	0.00	Conservation — <i>Cyclura</i>	500.00
Membership Dues	13,595.60	Bulletin Printing & Mailing	15,431.66
Contributions (unrestricted)	934.00	Membership Printing	842.05
Amazon.com	125.92	Awards	509.83
Bulletin Ads	225.00	Bank Fees	20.00
Bulletin Back Issues	75.00	Donations	2,615.00
Interest	804.14	Liability Insurance	5,341.00
Raffle	1,070.75	Library	31.44
		Licenses and Permits	227.00
		Postage	1,974.99
		Rent (storage)	240.00
		Speaker Reimbursement	1,775.68
		Midwest Symposium 2009	510.11
		Telephone	209.40
		Miscellaneous	150.22
Total Income	\$72,391.56	Total Expense	\$67,645.98

Net Income \$4,745.58

Chicago Herpetological Society
Balance Sheet: December 31, 2008

Assets	
Checking	\$ 5,976.12
Money Market	40,330.72
Total Assets	<u>\$46,306.84</u>
Equity	
Restricted — Adoptions	\$ 6,523.99
Restricted — Grants	202.00
Restricted — Massasauga	426.00
Retained Earnings	34,409.27
Net Income	4,745.58
Total Equity	<u>\$46,306.84</u>

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: GrmtRodent@aol.com.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutritionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, \$.17 each; fuzzies, \$.24 each; hoppers, \$.30 each; weanling, \$.42; adult, \$.48. Rats: starting with pinks at \$.45 each, to XL at \$1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. PO Box 85, Alpine TX 79831. Call **toll-free** at (800) 720-0076 or visit our website: <http://www.themousefactory.com>.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice available: small newborn pinks up to jumbo adults. Prices start at \$25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: Rats—live or frozen. I breed rats for my collection of boas so only top quality lab chow and care will do, I'm now offering surplus animals for sale. Located in far south suburbs of Chicago. Only orders of 20 or more please, no large rats will be available. For current availability and prices, please e-mail Steve at smuys@sbcglobal.net.

For sale: books. *Distribution of Mammals in Colorado* by David Armstrong, 1972, 415 pp., 133 figs. (mostly range maps), 36 tables, monograph of the Natural History Museum of the University of Kansas (h), \$26; *Birds of Colorado, Volumes 1 and 2*; by Alfred M. Bailey and Robert J. Niedrach, 1965; 895 pp., 124 plates of color paintings of 420 species by 23 noted artists, over 400 b&w photos, the definitive work on Colorado birds, DJs frayed at top & bottom, \$84; *Animals of Eastern Australia—A Photographic Account of the Mammals, Reptiles and Amphibia* by Stan & Kay Breeden, 1967, 128 pp., 197 b&w and 24 color photos, essentially an album of fine photos, half of the book is herps, DJ; (h), \$40; *Snakes of Western Australia* by G. M. Storr, L. A. Smith and R.E. Johnstone, 1986, 187 pp., 24 plates with 1 to 8 color photos each, drawings, range maps, description, distribution, derivation of scientific names, extensive bibliography (s), \$38; *Australian Wildlife* by Eric Worrell 1966, 128 pp., nearly 200 color and b&w photos (including one of Worrell), 32 pp. on herps, mylar covered DJ, (h), \$26. h=hardbound, s=softbound. All books in excellent condition. Subject to prior sale. \$3 postage and handling for orders under \$25, free for orders \$25 or more. William R. Turner, 7395 S. Downing Circle W., Centennial, CO 80122. Tel. (303) 795-5128; e-mail: toursbyturner@aol.com

For sale: Well started 2008 C.H. Sri Lankan stars, leopard tortoises and pancake tortoises. All captive-hatched by us and eating great. Stars are \$450 each, with temperature-sexed pairs from unrelated females available. Leopards are \$125 each and pancakes are \$350. Contact Jim or Kirsten Kranz at 262-654-6303 or e-mail KKranz1@wi.rr.com.

For sale: Trophy quality jungle carpet, diamond-jungle, and jaguar carpet pythons. Website: moreliapython.googlepages.com E-mail: junglejohn@tds.net

For sale: Well started spider morph ball pythons (*Python regius*) available for free delivery in the Chicagoland area—males, \$350. Also available are high-contrast, Sarawak locality and Walnut × Sarawak pairing Borneo pythons (*Python breitensteini*). Pricing is based on male sex with \$50 more for females, if available: 2007 high-contrast, \$150; 2007 Sarawak, \$175; 2006 Sarawak, \$200, 2007 Walnut × Sarawak (melanistic Borneos), \$125. All feeding on frozen thawed adult mice and/or rats. Shipping available as an additional cost, if needed. Details and helpful info on my website at www.richcrowleyreptiles.com Contact Rich Crowley at 708-646-4058 or email pogona31@yahoo.com.

Free to any interested party: Back issues of CHS Bulletin from Oct 1987 to the present. I live in the Chicago area and can bring them to the monthly meeting. John Christianson, jnlchristianson@comcast.net

Herp tours: **Madagascar—Tortoise Tour & Chameleon Tour** seeking adventurous members for January–February 2009. The goal of the tortoise tour, to be co-led by **Peter Pritchard** of the Chelonian Research Institute and **Bill Love**, will be to see all native species in the wild and record various aspects of their lives photographically. The later chameleon tour, co-led by **Mike Monge** of FL Chams and **Bill Love**, will focus on panther chameleons, trying to find and photograph as many of the color morphs as possible in the wild. Details are at Blue Chameleon Ventures' site at: www.bluechameleon.org.

Herp tours: The beautiful Amazon! Costa Rica from the Atlantic to the Pacific! Esquinas Rainforest Lodge, the Osa Peninsula, Santa Rosa National Park, and a host of other great places to find herps and relax. Remember, you get what you pay for, so go with the best! GreenTracks, Inc. offers the finest from wildlife tours to adventure travel, led by internationally acclaimed herpers and naturalists. Visit our website <http://www.greentracks.com> or call (800) 892-1035, E-mail: info@greentracks.com

Snake sitting or boarding: Mild-mannered adult female reticulated python, 18 feet, needs you from May to fall 2009. We are searching a responsible person either to house sit with her in northern Michigan or care for her at your home (non-Illinois only). Must be willing to feed her rabbits and shed her. Attractive, flexible terms. For more details, contact Kathy Bricker, 231-627-4830 or kathyhomeaccount@hotmail.com

Video and Photo Archival Co.: We can quickly and conveniently transfer all your videos and photo to DVD. We will transfer your home movies and or wedding videos to DVD quickly and efficiently. Those videos are priceless. Preserve them forever. Any format home camcorder tapes are fine --- 8mm Mini-Dv VHS-c etc. Eric Siegal, (224) 623-2551.

Line ads in this publication are run free for CHS members—\$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: MADadder0@aol.com

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, January 28, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Dan Thompson**, animal ecologist for the Forest Preserve District of DuPage County, will speak about the district's recovery program for the Blanding's turtle, *Emydoidea blandingii*.

At the February 25 meeting **Timothy Herman**, a keeper at the Toledo Zoo, will speak. Tim's talk is entitled "Found and Lost: Discovery, Extirpation and (hopefully) Reintroduction of the Kihansi Spray Toad."

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

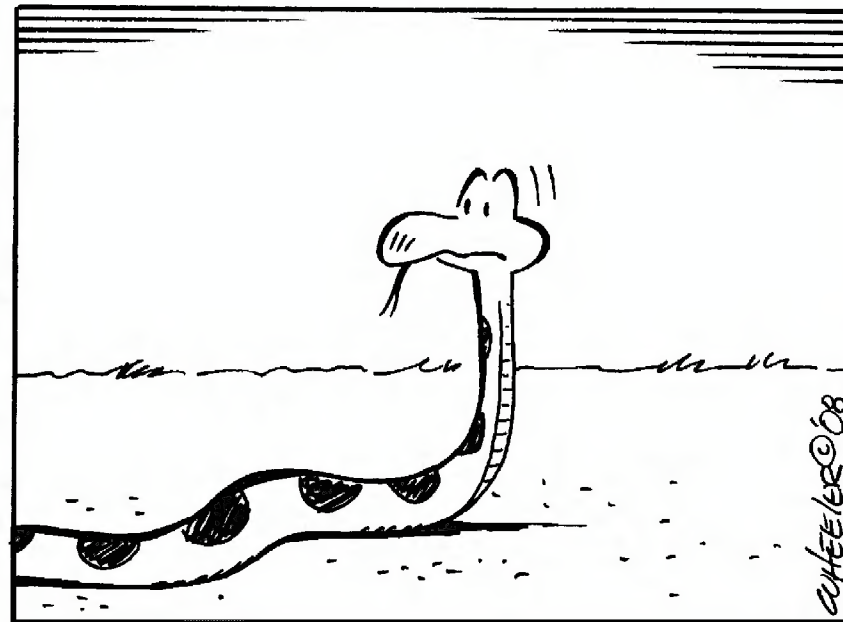
Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., February 13, in the adult meeting room on the second floor of the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the CTC website: <http://www.geocities.com/~chicagoturtle>.

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